

Technical Report 946

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Career Intentions and Behavior of Army Officers: A Model Testing Approach

Tanya J. Guthrie
U.S. Army Research Institute

January 1992

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Technical Report 946

Career Intentions and Behavior of Army Officers: A Model Testing Approach

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FOREWORD

This research was conducted to identify the social psychological factors involved in the decision to stay in or leave the Army officer corps. In addition, the research linked social psychological factors to separation behavior. The factors were identified through the application of two theories that describe the attitude-intention-behavior relationship. This research is the first to apply these models to describe career intentions and retention behavior of Army officers.

This effort provides information for Army policy makers and planners about the factors that influence the career decision process. It will serve as a foundation for the development of future predictive models that focus on the officers' career decision process.

Participation by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) in this effort is part of an ongoing research program designed to enhance the quality of Army personnel. This work is an essential part of the mission of ARI's Manpower and Personnel Policy Research Group (MPPRG) to conduct research to improve the Army's capability to assess manpower and personnel policies in recruiting and force structure. This research was undertaken in 1984 at the request of the Vice Chief of Staff of the Army. Out of that initial request emerged Project Proteus and the Longitudinal Research on Officer Careers project. Results from this research were briefed to the Deputy Chief of Staff for Personnel, Army Materiel Command, on 17 July 1991.



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CAREER INTENTIONS AND BEHAVIOR OF ARMY OFFICERS: A MODEL TESTING APPROACH

EXECUTIVE SUMMARY

Requirement:

This research was conducted to identify the social psychological factors involved in the decision to stay in or leave the Army officer corps. In addition, the research linked social psychological factors to separation behavior. The factors were identified through the application of two theories that describe the attitude-intention-behavior relationship. This research was the first to apply models of the theory of reasoned action and the theory of planned behavior to describe the career intentions and retention behavior of Army officers.

Procedure:

In December 1988, the 1988 Longitudinal Research on Officer Careers (LROC) survey was administered to 2nd lieutenants, 1st lieutenants, and captains in the Army. Through the Officer Master File (OMF), 8,931 junior officers from the population of 32,390 junior officers were mailed the questionnaire. The sample was stratified by source of commission, gender, and basic year group to account for the potential attrition and the uneven distribution of women in the Army. Questions from the 1988 LROC survey that supported the theory of reasoned action and the theory of planned behavior were selected. One variable was tracked through the 1989 and 1990 LROC surveys. Separation data through fiscal year 1990 from the Officer Longitudinal Research Data Base (OLRDB) were linked with the 1988 LROC survey data.

Findings:

The results support the application of models of the theory of reasoned action and the theory of planned behavior to Army officers. Attitudes toward staying in the Army and subjective norms involving the Army were positively related to intentions to stay, which were positively related to retention behavior. Overall, 59% of the variance in career intentions to stay in the Army and 25% of the variance in retention behavior was explained by the models.

Utilization of Findings:

The findings presented here are intended to increase the understanding of factors involved in officers' career decision process. This paper presents areas for future research on the process using LROC surveys.

CAREER INTENTIONS AND BEHAVIOR OF ARMY OFFICERS: A MODEL TESTING APPROACH

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CAREER INTENTIONS AND BEHAVIOR OF ARMY OFFICERS: A MODEL TESTING APPROACH

Introduction

Army researchers and personnel planners increasingly wish to identify the organizational, individual, and economic factors involved in the decision to stay or leave the Army officer corps. Information about turnover, if well understood, can be used to manage force structure composition. An understanding of the factors that influence the career decision process is important because the retention of high quality officers is a key priority among Army policymakers (Stone & Vuono, 1991). Policymakers need to know antecedents of turnover, assess the consequences, design and implement responsive policies, evaluate the effectiveness of these policies, and anticipate future turnover concerns (Mobley, 1982).

Maintaining force readiness requires that the Army anticipate the consequences of turnover and describe characteristics of officers. A clearer understanding of the social psychological factors that affect the decision to stay or leave will provide key information about officer turnover for Army policymakers. It will also provide a baseline to understand organizational impacts on officer careers via accession, promotion, retention, and selective early retirement boards.

This research identifies the social psychological factors involved in the decision to stay or leave the Army officer corps. It also links these factors to separation behavior. These factors were identified through the application of two theories that describe the attitude-intention-behavior relationship in Army officers.

Key Research in Organizational Turnover

Several important studies of civilians in the organizational literature provide the basis for applying the social psychological factors involved in the decision to stay or leave the Army. Porter and Steers (1973) reviewed the literature and identified several key factors that were related to job turnover. Specifically, job satisfaction was negatively related to turnover in a majority of the studies they reviewed.

This review served as a vehicle for a subsequent study on turnover. Porter, Steers, Mowday, and Boulian (1974) conducted a longitudinal study of the role of job satisfaction and commitment on turnover in psychiatric technicians. They concluded that individuals with more positive attitudes toward the organization were more likely to stay.

Five years later, Muchinsky and Tuttle (1979) reviewed more than 150 studies on the relationship between attitudes and job turnover. Consistent with the previous review, job satisfaction

was linked to turnover. At this point, satisfaction appeared to be the dominant factor related to turnover. However, they cited studies by Kraut (1975) and Newman (1974) that included intentions in the prediction of turnover. Kraut concluded that intent to remain in an organization was a better predictor of tenure than job satisfaction. This finding marked the beginning of the shift away from the traditional view of satisfaction as the dominant predictor of turnover.

The predictive relationship between intentions and turnover was further supported in a later review. Mobley, Griffeth, Hand, and Meglino (1979) reported that intentions were the strongest predictor of turnover and accounted for about 18 to 24% of the variance in turnover for various models. This review further supported the shift toward the use of intentions in turnover models.

Michaels and Spector (1982) found that variables such as job characteristics, satisfaction, organizational commitment, age, tenure, and perceived alternative employment opportunities were important in predicting turnover, but not as important as intentions. Steele and Ovalle (1984) examined the consistency of intention-behavior relationships and found that intentions were superior to affective measures. A moderate correlation was obtained between intentions and turnover ($r = .50$). It is clear from research thus far that there is a consistent, empirical relationship between intentions and turnover.

Intentions were found to be a significant predictor for turnover in the military as well. Intentions to leave or reenlist were found to correlate highly with reenlistment and separation in Marine Corps enlistees (Mobley, Hand, Baker, & Meglino, 1979; Youngblood, Mobley & Meglino, 1983).

Selected Attitude-Intention-Behavior Models

Hom, Katerberg, Jr., and Hulin (1979) compared various turnover models and found that models that incorporated attitudinal and normative components accounted for the most variance in intention and behavior. Models that incorporated the theory of reasoned action and the theory of planned behavior were selected for this research because they provide the most comprehensive means for explaining intention/behavior relationships.

Theory of reasoned action. The theory of reasoned action was first called the "theory of behavioral prediction" (Fishbein, 1967). This theory described the relationship between attitudes, intentions, and behavior. The attitude component of the theory reflected the person's attitude toward a particular behavior (e.g., leaving the Army). The subjective norm component referred to the perception of how relevant people would feel about a particular behavior. The behavioral intention component defined the probability of engaging in a specific behavior. The intention to perform a particular behavior was an additive

function of the attitude toward performing a particular behavior, the subjective norms for that behavior, and the motivation to comply with these norms.

The theory was renamed as the "Theory of reasoned action" (TORA) (Ajzen & Fishbein, 1977; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). This theory suggested that intention was an additive function of the individual's personal evaluation (attitude) regarding the behavior and the perception of social pressures (subjective norms) to engage in the behavior. The theory further stated that the measure of behavior and intention must correspond to each other in order for intentions to accurately describe behavior. Behavior is described in terms of target, context, time and action components. Simply stated, intentions must be specific to the behavior in question. In a recent meta-analysis of the research literature on TORA, Sheppard, Hartwick, and Warshaw (1988) found strong evidence to support the predictive qualities of the model.

Theory of planned behavior. The theory of planned behavior (TOPB) is a special case of the theory of reasoned action. Ajzen (1985) expanded the TORA model by including the construct of volitional control over an outcome. Perceived behavioral control was defined as the belief about how easy or difficult it would be to engage in a particular behavior (Ajzen, 1985). The addition of this construct was thought to improve the predictive capabilities of the TORA model. The predictive capabilities were improved when this measure was included in the model.

In one of their initial studies, Schifter and Ajzen (1985) used TOPB to predict success in a weight loss program for college women. The degree of perceived control over weight was included as an antecedent of the intention to lose weight, and emerged as the strongest predictor of weight loss ($r = .41$). The overall model accounted for 55% of the variance in intentions to lose weight.

In a recent study, Netemeyer and Burton (1990) used voting behavior as the dependent variable and compared the predictive validity of the theory of reasoned action with the theory of planned behavior. Attitudes toward voting, subjective norms about the expectations of important others toward voting, perceived control over voting behavior, and intentions to vote were based on summed responses to specific questionnaire items. Using a hierarchical regression approach, TOPB accounted for 65% and TORA accounted for 20% of the variance in intention to vote. Both the TORA and TOPB models accounted for 35% of the variance in voting behavior.

Key Research in the Application of TORA/TOPB to Turnover

The theory of reasoned action and the theory of planned behavior have been applied to intentions and turnover behavior in a limited number of studies. In the meta-analysis of studies utilizing the theory of reasoned action (see Sheppard, Hartwick,

& Warshaw, 1988) only 3 out of 31 studies that investigated the relationship between intention and behavior focused on turnover. Only 3 out of 44 studies that investigated the relationship among attitudes, subjective norms and intentions focused on turnover. Even though studies on turnover have been conducted, few have applied the TORA and TOPB models to the decision to stay or leave an organization.

Civilian studies. The application of the TORA and the TOPB model to turnover was investigated in a study of nurses, nursing home employees, and university faculty. Newman (1974) tested the theory of reasoned action in a sample of employees from a county nursing home. The model accounted for 49% of the variance in intentions to resign, and 13% of the variance in withdrawal behavior.

Presholdt, Lane, and Matthews (1987) tested a model of nurse turnover using TORA and added the variable of moral obligation to the model. The model accounted for 32% of the variance in employment status and 68% of the variance in intentions. Intentions were significant predictors of turnover; subjective norms, attitudes, and moral obligation were significant predictors of intention.

Based on their previous study, Lane, Matthews, and Prestholdt (1990) created separate TORA models for married vs. unmarried nurses and for bachelor's degree holders vs. non-degree holders. For all subgroups, intentions were a significant predictor of employment status. These findings suggested that demographic variables are important

Only one research study applied the TOPB model to turnover. In a study of turnover in faculty members at a university, the TORA and TOPB models were compared (Hinsz & Nelson, 1989). They measured intentions to search for alternative positions and intentions to resign. Attitudes and subjective norms regarding searching for a new position or resigning were determined. The TORA model accounted for 31% of the variance in intentions to resign during the current year and 37% of the variance in intentions to resign during the next two years. There was a slight improvement in prediction when perceived behavioral control was used in the model. The TOPB model accounted for 32% of the variance in intentions to resign during the current year and 38% of the variance in intentions to resign during the next two years. The addition of perceived behavioral control only slightly improved the prediction of turnover.

Military studies. One of the first studies to evaluate the role of attitudes and intentions on behavior was conducted to compare the relative efficacy of several models in National Guard members. In a comparison of three approaches to the prediction of turnover, the TORA model accounted for 66% of the variance in intention to reenlist and 42% of the variance in reenlistment behavior (Hom, Katerberg, Jr., & Hulin, 1979). In a more recent study, Hom and Hulin (1981) compared several turnover models in a

sample of National Guard members. A model incorporating TORA constructs accounted for 62% of the variance in reenlistment intention and 49% of the variance in reenlistment behavior.

In another study, several models of the reenlistment decision were compared (Zirk, McTeigue, Wilson, Adelman, & Pliske, 1987). They recommended the Fishbein and Ajzen theory as an appropriate model for describing the individual enlistment decision. This model defined a clear dependent variable (intention and behavior) and allowed for the incorporation of other decision components.

Results from the Career Decision Survey validated the theory of reasoned action in describing Army enlistment intentions (Wilson & Perry, 1988). The model accounted for 46% the variance in intentions to enlist in the Army. The results clearly demonstrated the predictive utility of TORA models.

Rationale

Based on the results of the military studies, the theory of reasoned action is the best model for describing intentions and retention behavior for enlisted populations. The relative superiority of these models is evident from the proportion of variance in intention and behavior accounted for by the model, when compared to other models. It is clear that these models are applicable to enlisted soldiers; it is unclear whether these models are applicable to officers.

This research effort is the first to apply the theory of reasoned action and the theory of planned behavior to Army officers. This research effort is also the first to link these models to retention and separation behavior. This information can be used by policymakers and planners to better understand the factors involved in the decision to stay or leave the Army officer corps.

Method

Subjects/Sampling Plan

In December 1988, the 1988 Longitudinal Research on Officer Careers (LROC) survey was mailed to 2nd lieutenants, 1st lieutenants, and captains in the Army. The sampling characteristics described in this report were obtained from a recent overview of the LROC Project (Carney, in preparation). Through location information on the Officer Master File (OMF), 8,931 junior officers were mailed the questionnaire from the population of 32,390 junior officers. Participation in the survey was completely voluntary. The sample for 1988 consisted of 5,598 junior officers which represented a return rate of 62.7%. This relatively high response rate was due to extensive remailing efforts after initial survey administration. The sampling plan called for a stratification by gender (with women

oversampled by 15%), source of commission, and basic year group (commission year). This stratification plan was implemented to account for potential attrition in the sample over time, and the unequal distribution of men and women in the Army. Approximately 1,000 officers were selected from each year group from 1980 to the present. For stratification by source of commission and gender, the plan called for the sampling of 100% of the United States Military Academy (USMA) females, 66% of the USMA males, 50% of the Reserve Officer Training Corps (ROTC) females, and 33% the ROTC males.

The sample of 5,598 officers was reduced for analysis purposes. Overall, 249 respondents with invalid social security numbers ($n = 249$) and invalid separation data ($n = 819$) were dropped from the final data set. In addition, only officers with a source of commission from the U. S. Military Academy (USMA) and the Reserve Officer Training Corps (ROTC) were included in the final data set. Officers with a direct commission (DC) or a commission from Officer Candidate School (OCS) ($n = 49$) were not officially sampled in 1988 and thus were not included. The final sample consisted of 4,490 officers who completed the 1988 LROC survey. The distribution of commission sources (ROTC and USMA) in the officer population in 1989 was 70.8% (Guthrie, 1991).

Instrument

The 1988 LROC survey contained 197 questions which translated to approximately 208 items. The questions encompassed all phases of the career planning and decision process of a company grade officer. Overall, the items were grouped into the categories of background information, current assignment information, career issues, Army life, Army life expectations, and spouse information. Of the 208 items, 193 were repeated in subsequent surveys in 1989 and 1990. Extensive analyses of trends in intentions and satisfaction in a longitudinal sample of officers are presented in a recent report (Carney, in preparation).

For the purpose of this research, 11 questions were selected from the 1988 survey which were used to construct independent and dependent measures to include in the TOPB model. The question regarding whether an officer's initial obligation was met, was tracked from the 1988 LROC survey through the 1989 and 1990 LROC survey. The 1988 LROC survey was created in SAS format from its original SPSS format and was merged with the Officer Longitudinal Research Data Base (OLRDB). The OLRDB was designed to provide supporting data on officer training, development, effectiveness and retention. The current OLRDB core data set (updated through fiscal year 1990) provided behavioral data on separations for the 1988 sample. Previous reports have detailed the data elements in the Core data set (Hunter, Rachford, Kelly, & Duncan, 1987; Younkman, 1987). This merged LROC/OLRDB SAS file was then written as a flat (ASCII) file and then read as an SPSS file for analyses.

Dependent Measures

Separation behavior. Separation behavior was a dichotomous variable coded as a "0" if the officer left the Army in 1988, 1989, or 1990 and "1" if no separation year existed based on SEPDTYY variable in the OLRDB Core data set.

Behavioral intentions. Behavioral intentions were assessed by a question in the 1988 LROC survey involving plans to stay in the Army and a question involving intentions to stay in the Army. Specifically, the questions assessed the current intentions to stay in the Army and career plans (see Appendix A).

Independent Measures

Attitudes toward the Army. Attitudes toward staying in the Army or leaving were assessed by four questions in the 1988 LROC survey involving affiliation with the Army, feelings about leaving, reluctance to leave, and work enjoyment in the Army (see Appendix B). All responses were scored along a 5-point Likert scale from strongly agree to strongly disagree.

Subjective norms. Subjective norms were assessed by three questions in the 1988 LROC survey involving perceptions of alignment with civilian beliefs, military pride, and civilian identification. The questions included the Likert scale described above as well as dichotomous responses for civilian or Army affiliation (see Appendix C).

Perceived behavioral control. Perceived behavioral control over leaving the Army was assessed by two questions in the 1988 LROC survey involving how difficult it would be to leave the Army and how difficult it would be to find a civilian job. All responses were scored along a 5-point Likert scale from very difficult to very easy (see Appendix D).

Social structural variables. Additional variables to be included in the model were gender, source of commission, branch satisfaction, and whether or not the obligation was met. Johnston (1988) found that initial obligation has a substantial confounding effect on the model, and should be controlled. Gender, source of commission, and branch dissatisfaction were included because they were negatively related to career intentions (Carney, in preparation) in longitudinal sample of officers completing the LROC survey.

Branch satisfaction was computed from two variables in the 1988 LROC survey, which asked what branch the officer was in vs. the branch the officer wanted to be in. If the branch the officer wanted to be in was equal to the branch they were in then the officer was satisfied (1). If this relationship was not equal the officer was not satisfied (0). Obligation was determined from the variable from the 1988, 1989, or 1990 LROC survey which asked officers if their obligation had been met. If an officer reported that the obligation was met in 1988, 1989, or

1990, then the obligation was met (1). If the obligation was not met in either of these years, then a code of (0) was assigned.

Analyses

The initial phase of the analyses consisted of a data reduction effort. Independent and dependent measures were generated through factor analyses of the original questionnaire variables. The goal of each factor analysis was to reduce the variables into a meaningful measure. This data reduction effort reduces the error involved in using single items measures of a construct, thus increasing the construct validity of the measures (Cook & Campbell, 1979). Some measures were constructed of two questionnaire items while the remaining were constructed of three items. Tabachnick and Fidell (1989) noted that measures composed of two items may be reliable if they are highly correlated with each other, and uncorrelated with other measures.

A series of principal components analyses were applied to the original variables to create factor scores for each measure. The factor scores were standardized ($M = 0.0$; $sd = 1.0$) in this process. Factor-analytically derived independent and dependent measures had eigenvalues of 1.0 or greater (see Appendix E). Lower factor scores for the behavioral intention factor indicated intentions to stay in the Army, while higher factor scores indicated intentions to leave. Lower factor scores on the attitude factor indicated a more positive attitudes towards Army affiliation and an Army career, while higher scores indicated more negative attitudes toward the Army. Lower factor scores on the subjective norm factor indicated more social comparisons with Army leaders while higher scores indicated more civilian comparisons. Lower factor scores on the perceived behavioral control factor indicated greater difficulty leaving the Army and less control over the option to leave. Higher scores on this factor indicated less difficulty leaving the Army and more control over the option to leave.

Finally, the theory of planned behavior was tested using the measures of attitudes toward staying in the Army, subjective norms, and perceived behavioral control. Hierarchical regression was the preferred method of analysis for many studies on using the theory of reasoned action (TORA) and the theory of planned behavior (TOPB) (Arnold & Feldman, 1982; Hinsz & Nelson, 1990; Netemeyer & Burton, 1990; Prestholdt, Lane, & Matthews, 1987; Schifter & Ajzen, 1985). The proportion of the variance explained by the contribution of specific factors at each step was evaluated using partial correlation (r_p), multiple-partial correlation (r_{mp}) and multiple correlation (R). The proportion of variance in the dependent measure explained by the model was used to determine the efficacy of the various models tested.

Results

The first phase of the analyses involved the description of sample characteristics. The LROC sample used in these analyses had a higher proportion of females and officers with a USMA commission source when compared to the OLRDB sample (Guthrie, 1991). A comparison of final 1988 LROC sample characteristics with a 1990 OLRDB sample is presented in Table 1. The LROC sample was almost identical to the sample derived from the OLRDB on characteristics of rank, separation behavior, and branch category.

The zero-order correlation coefficients of the independent and dependent measures are presented in Table 2. The mean factor score for each measure by separation behavior is presented in Figure 1. Based on this figure, officers who left the Army had consistently higher factor scores than those who stayed. The largest mean difference between those that stay or leave was evident in the behavioral intention measure.

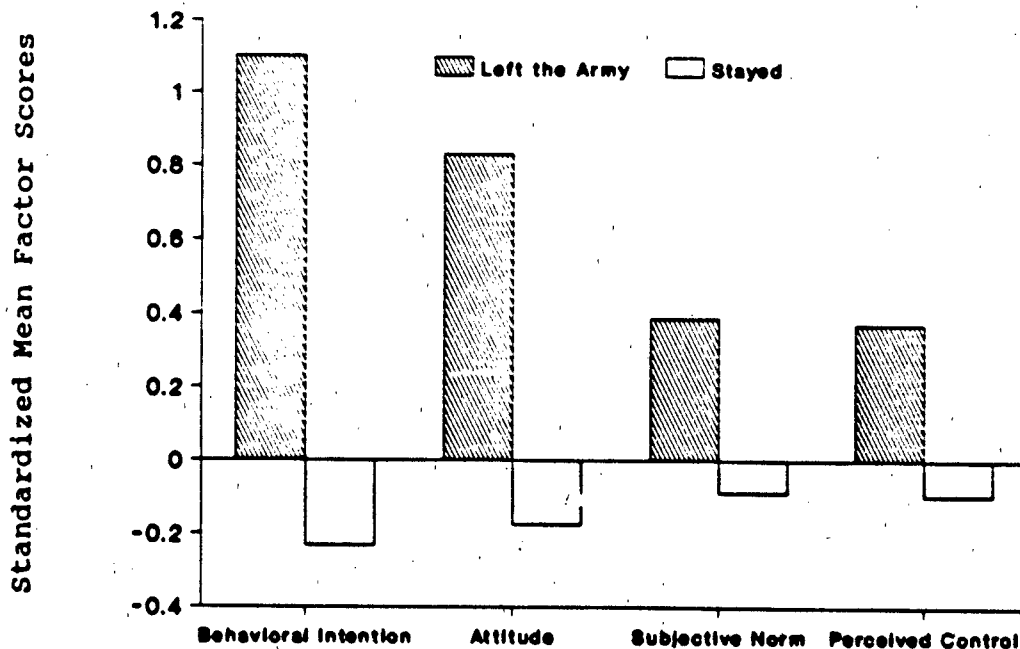


Figure 1. Mean factor scores for independent and dependent measures by retention behavior

Table 1
Characteristics of the 1988 LROC Sample and the 1990 OLRDB Sample

	1988 LROC Sample (N=4490)		1990 OLRDB Sample ^a (N=31270)	
	n	%	n	%
Gender				
Male	3171	70.6	26947	86.2
Female	1319	29.4	4323	13.8
Commission Source				
ROTC	3001	66.8	25098	80.3
USMA	1489	33.2	6172	19.7
Branch Category				
Combat Arms	2398	53.5	16237	51.9
Combat Support	792	17.7	6352	20.3
Combat Service Support	889	19.8	5752	18.4
Special Branches	404	9.0	2929	9.4
Rank^b				
Second lieutenant	475	10.6	112	0.4
First lieutenant	1334	30.0	8497	27.2
Captain	2650	59.1	22369	71.5
Major and above	17	0.4	292	0.9
Separation status				
Left	721	16.1	6012	19.2
Stayed	3769	83.9	25258	80.8

Note: ^aThe OLRDB sample from the 1990 Core data set (officer population data set) included basic year groups 1980-1987, officers on active duty in 1989, and sources of commission from the U. S. Military Academy and the Reserve Officers Training Corps. ^bRank for the 1990 OLRDB was based on the most recent rank reported in the Core data set; rank for the 1988 LROC survey was based on self-reported rank at the time the survey was conducted.

Table 2
Zero-order Correlation Coefficients of Independent
and Dependent Measures

	1	2	3	4	5
1. Separation behavior	1.000				
2. Behavioral intention	-.493*	1.000			
3. Gender	.027	-.133*	1.000		
4. Source of commission	.051*	-.143*	-.206*	1.000	
5. Branch satisfaction	.119*	-.198*	.064*	-.054*	1.000
6. Met obligation	.194*	-.313*	.029	.173*	.088*
7. Attitudes toward staying	-.372*	.747*	-.140*	-.079*	-.221*
8. Subjective norms	-.176*	.325*	-.161*	.081*	-.065*
9. Perceived behavioral control	-.171*	.227*	.005	-.214*	.027
	6	7	8	9	
6. Met obligation	1.000				
7. Attitudes toward staying	-.242*	1.000			
8. Subjective norms	-.136*	.471*	1.000		
9. Perceived behavioral control	-.173*	.214*	.088*	1.000	

Note. * = $p < .001$.

Sample sizes ranged from 4363-4490.

The second phase of the analyses involved the application of hierarchical regression analysis to independent measures and social structural variables. The independent measures were behavioral intention, attitudes toward staying in the Army, subjective norms and perceived behavioral control. Using hierarchical regression analysis, the independent measures were entered into the model using "blocks" which allowed a theoretically driven ordering of variables. The purpose of these analyses was to determine the relative contribution of the independent measures and social structural variables to career intentions and retention behavior.

Prior to testing the regression models, the influence of interaction effects of the social structural variables was determined. Interactions for the social structural variables were found to account for less than 1% of the variance in career intentions and retention behavior. All possible two-way, three-way, and four-way interactions were tested after the social structural variables were entered on the first block. Due to this finding, interaction terms for the social structural variables were dropped from the model.

Two hierarchical regression models were tested to determine the relative contribution of the TORA and TOPB to career intentions. In addition, two hierarchical regression models were tested to determine the relative contribution of TORA and TOPB to retention behavior. The general ordering of variables in the TORA model included the entry of social structural variables and then the independent measures. Social structural variables were entered at the first step in all the analyses, reflecting the fact that individual characteristics must be controlled for in determining the effect of additional variables in the model (Arnold & Feldman, 1982). The criteria for entry of variables into and out of the regression model were based on probability values of ($p = .0001$ for entry; $p = .001$ for removal) and F-values of ($F = .05$ for entry; $F = .005$ for removal). The listwise deletion of missing values option eliminated all cases with missing values for a given variable in the model.

Application of TORA/TOPB Models: Career Intentions

Initially, the relative contributions of the TORA and the TOPB model variables to career intentions were determined. The additional contribution of perceived behavior control (TOPB model) was assessed. For the TORA model, gender, source of commission, branch satisfaction, and obligation were entered as a block in the first step. At the first step, these social structural variables accounted for 16% of the variance in intentions to stay in the Army. In the second step, attitudes toward staying in the Army and subjective norms were entered as a block and accounted for an additional 43% of the variance. A summary of the results of the second step demonstrates that the TORA model accounted for 59% of the variance in career intentions ($R = .7650$, $p < .001$), when gender, source of commission, branch satisfaction and obligation were controlled. The results of the

second step for the TORA model, with corresponding partial correlations (r_p) and standardized regression coefficients or betas (β) are presented in Table 3. Attitudes toward staying in the Army had the highest partial correlation with intentions to stay in the Army.

The additional contribution of TOPB model variables was determined from the addition of perceived behavioral control. The order of entry of the variables into the model was identical to the TORA model and the overall multiple R values were identical. The partial correlations for the model variables were only slightly affected by the addition of perceived behavioral control. In the third step, perceived behavioral control was entered and accounted for less than 1% of the variance in career intentions. At the third step, the TOPB model variables accounted for 59% of the variance in career intentions ($R = .7662$, $p < .001$) when gender, source of commission, branch satisfaction, and obligation were controlled. A summary of the results of this step is presented in Table 3. A comparison of these two models suggests that the TOPB model was only slightly better than the TORA model in describing intentions to stay in the Army.

Application of TORA/TOPB Models: Retention Behavior

The next phase of the regression analyses explored the relative contribution of the TORA and the TOPB model variables to retention behavior. Again, the additional contribution of perceived behavioral control (TOPB model) was assessed. Like the previous models tested, gender, source of commission, branch satisfaction, and obligation were entered as a block in the first step. At the first step, these social structural variables accounted for only 5% of the variance in behavior. At the second step, behavioral intention was entered and accounted for an additional 20% of the variance. At the third step, attitudes toward staying in the Army and subjective norms were entered as a block and made a non-significant contribution to the overall variance ($r_{np} = .0004$). A summary of the results of the third step demonstrated that the TORA model accounted for 25% of the variance in retention behavior ($R = .5012$, $p < .001$) when gender, source of commission, branch satisfaction and obligation were controlled. The results of the third step for the TORA model, with corresponding partial correlations (r_p) and standardized regression coefficients (β), are presented in Table 4.

The additional contribution of the TOPB model was determined from step 4. The order of entry of variables into the model was identical to the TORA model. At the fourth step, perceived behavioral control was entered and accounted for less than 1 percent of the variance ($r_{np} = .0038$). A summary of the results of this step demonstrated that the TOPB model accounted for 26% of the variance in retention behavior ($R = .5049$, $p < .001$) when gender, source of commission, branch satisfaction and obligation were controlled. A summary of the results of this step is

Table 3
Regression Analyses of Behavioral Intention on TORA and TOPB Models

		TORA		TOPB	
Step	Independent Measures	β	r_p	β	r_p
1	Gender	-.046	-.068***	-.046	-.068***
	Source of commission	-.069	-.100***	-.060	-.087***
	Branch satisfaction	-.028	-.041**	-.031	-.046**
	Met obligation	-.130	-.189***	-.125	-.181***
2	Attitudes toward staying	.714	.680***	.706	.671***
	Subjective norms	-.034	-.046**	-.034	-.046**
		R^2	.7650		
		R^2	.5852		
		F	1008.63***		
degrees of freedom			(6,4288)		

3	Perceived behavioral control			.045	.067***
		R^2	.7662		
		R^2	.5871		
		F	870.96***		
degrees of freedom			(7,4287)		

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 4
Regression Analyses of Retention Behavior on TORA and TOPB Models

Step	Independent Measures	TORA		TOPB	
		β	r_p	β	r_p
1	Gender	-.048	-.053***	-.048	-.054***
	Source of commission	-.029	-.032*	-.040	-.044**
	Branch satisfaction	.029	.034*	.034	.038*
	Met obligation	.041	.044**	.035	.037*
2	Behavioral intention	-.484	-.339***	-.478	-.335***
3	Attitudes toward staying	.004	.003	.012	-.008
	Subjective norms	-.022	-.022	-.022	-.023
	R	.5012			
	R^2	.2512			
	F	205.40***			
	degrees of freedom	(7,4287)			
4	Perceived behavioral control			-.065	-.071***
	R	.5049			
	R^2	.2550			
	F	183.28***			
	degrees of freedom	(8,4286)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

presented in Table 4. The TOPB model was only slightly better than the TORA model in describing retention behavior.

An examination of the diagnostics for multicollinearity for the variables in the TORA and TOPB models suggested that multicollinearity may be operating. The variance inflation factor (VIF) for attitudes toward staying in the Army and behavioral intention in the TORA model was (2.664) and (2.411), respectively. The corresponding VIF for attitudes toward staying in the Army and behavioral intention in the TOPB model was (2.681) and (2.422), respectively. An examination of the strong correlation between attitudes toward staying in the Army and behavioral intention ($r = .747$, $p = .0001$) further supported this finding. Neter, Wasserman, and Kunter (1989) noted that a variance inflation factor greater than 1 was indicative of multicollinearity problems. Cohen and Cohen (1983) suggested that measures should be dropped from the model if they indicate multicollinearity. In addition, the non-significant contribution of attitudes toward staying in the Army and subjective norms to the TORA model suggested that those measures should be dropped from the regression equation.

Application of Reduced TOPB Model: Retention Behavior

The final stage of the analyses consisted of regressing the reduced TOPB model on retention behavior. The factors of attitudes toward staying in the Army and subjective norms did not make a significant contribution to retention behavior in the TORA and TOPB models, and were dropped. Further support was obtained for dropping attitudes toward staying in the Army from the equation due to multicollinearity with behavioral intention. The order of entry of the social structural variables into the reduced TOPB model was identical to the previous models tested. At the first step, the social structural variables accounted for 5% percent of the variance in behavior. At the second step, behavioral intention was entered, and accounted for an additional 20% of the variance in behavior. At the third step, perceived behavioral control was entered and accounted for less than one percent of the variance ($r_{\text{mp}} = .0038$, $p < .001$). The reduced TOPB model, with corresponding partial correlations (r_p) and standardized regression coefficients (β), is presented in Table 5. A summary of the results of the third step demonstrated that the reduced TOPB model accounted for 25% of the variance in retention behavior ($R = .5045$, $p < .001$) when gender, source of commission, branch satisfaction and obligation were controlled. The overall variance in behavior accounted for in the reduced TOPB model was almost identical to the TOPB model.

Discussion

The results suggest that attitudes toward staying in the Army are almost identical to intentions to stay in the Army. These attitudes toward staying consist of a strong Army

Table 5
Regression Analyses of Retention Behavior on Reduced TOPB Model

Step	Independent Measures	TOPB	
		β	r_p
1	Gender	-.047	-.052***
	Source of commission	-.049	-.046**
	Branch satisfaction	.033	.037*
	Met obligation	.036	.039*
2	Behavioral intention	-.476	-.446***
3	Perceived behavioral control	-.065	-.071***
	R	.5045	
	R^2	.2546	
	F	244.04***	
	degrees of freedom	(6,4288)	

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

affiliation and an enjoyment of Army work. In addition, those that intend to stay are more likely to have a value system linked to the Army, and are more likely to align themselves with respected Army leaders. Simply stated, the subjective norms for an officer who intends to stay are related to other officers. Control over leaving and difficulty leaving the Army are weakly related to career intentions. Perceptions of perceived behavioral control over leaving the Army has little effect on the intention to stay.

These findings further suggest that intentions to stay in the Army are positively related to retention behavior. Again, perceived control over leaving and difficulty leaving the Army have little effect on retention behavior. Attitudes toward staying in the Army and subjective norms contribute more to the understanding of intentions to stay, than actual behavior.

Efficacy of Models Tested

This research is unique in that it is the first to apply models incorporating the theory of reasoned action and the theory of planned behavior to Army officers. The results support the application TORA and TOPB to the study of retention intentions and behavior in military populations. Both the theory of reasoned action (TORA) and the theory of planned behavior (TOPB) models account for about 58% of the variance in career intentions. Most of this variance is accounted for by attitudes toward staying in the Army and normative perceptions. Gender, source of commission, obligation, and branch satisfaction are less important than the attitudinal factors. For the TOPB model, perceived control makes little difference the overall variance in career intentions accounted for by the model.

The TORA and the reduced TOPB model account for about 25% of the variance in retention behavior. Here career intentions to stay in the Army account for most of the variance. Gender, source of commission, obligation, and branch satisfaction are less important than intentions to stay. Attitudes toward staying in the Army and subjective norms were dropped because they did not make a significant contribution to the model.

The results of the hierarchical regression analyses are consistent with other studies using TORA and TOPB models (Hinsz & Nelson, 1989; Netemeyer & Burton, 1990; Presholdt, Lane & Matthews, 1987). The proportion of the variance in intentions to leave accounted for by the models in other studies range from 38-68%. The proportion of the variance in behavior accounted for range from 32-35%. Clearly, this consistency of results is comforting and suggests that the models used here are quite appropriate for military populations.

Another interesting finding is the emergence of the more parsimonious TOPB model. Overall, behavioral intentions accounted for most of the variance in the model and have the strongest relationship with behavior. Clearly, intentions are so

strongly correlated with behavior that the effects of other variables in the models are modified or suppressed. The results from the reduced TOPB model suggest that intention and perceived control, controlling for the effects of gender, source of commission, branch satisfaction, and obligation are adequate for understanding retention behavior.

It must be remembered that the measures included in the models are theory-driven, and quite specific in scope. The TORA and TOPB models utilize a specific set of constructs. Ajzen (1985) admits that there are other variables mediating the attitude-behavior relationship even though the model consists of a set of meaningful variables. Obviously, there are many other variables which should be tested to determine their relationship with career intentions and retention behavior. The goal would be to improve how much we know about retention intentions and behavior. The proportion of the variance "unaccounted" for suggests that there are additional variables which need to be explored.

The results presented here are useful for Army policymakers. The findings from testing these models can assist in the development of personnel policies designed to influence the retention of high quality officers. This will become a stronger concern as the Army begins to downsize over the next few years.

Directions for Future Research

This paper sets in motion areas for future research with the LROC surveys and opens the door for an increased understanding of the factors underlying career decisions of officers. Other turnover research has included variables such as age, salary, organizational commitment, and perceived alternative employment in their models (Mobley, Griffeth, Hand, & Meglino, 1979). How these variables influence career intentions and behavior have not been adequately explored for Army officers.

Potential areas for research may offer more insight into the career decision process. Current assignment information, career development issues, educational factors, Army life expectations, promotion issues, economic factors, and spousal satisfaction are potential research areas. The mediating effects of these factors on retention behavior and career intentions have not been addressed. Unless these areas are explored, the influence of these factors may be ignored or at best, underestimated.

In addition to exploring these factors, longitudinal aspects of the career development process must be considered. The appeal for longitudinal research is clear from the previous section on military retention research. Approximately 193 items were included in the 1988, 1989, and 1990 LROC surveys and represent potential cohort longitudinal analyses. Changes in perceptions across time in variables related to career issues, economic factors, promotion issues, Army life expectations and spousal satisfaction have not been adequately explored.

An understanding of the effects of current events and Army policy changes are potential research areas as well. Monitoring changes in the perceptions of the Army, changes in intention, and changes in retention behavior could be accomplished through the use of regression-discontinuity designs (Cook & Campbell, 1979). Simply stated, these designs describe the trends in perceptions, attitudes, and behaviors prior to policy implementation, a current event, or a military action. These trends are then described after these events occur.

Finally, more sophisticated methods of analysis must be employed which can potentially explore or test causal relationships among variables. Some researchers have applied these models to the turnover process quite successfully (Farkas & Tetrick, 1989; LaRocco, 1983; Williams & Hazer, 1986). Models exploring the causal relationships between career decision variables are essential.

Conclusions

The decision to stay or leave the Army as an officer is a complex decision making process. These decisions are most accurately reflected by an officer's intentions. Officers that intend to stay in the Army have a stronger professional and personal affiliations with the Army. These social psychological factors may be mediating intentions to stay, which in turn, affect the decision to stay or leave. The relative weights of these factors in the decision to stay or leave may change as a function of the downsizing of the Army over the next few years.

Research efforts such as the one described here, can provide information for Army policymakers and planners about the factors that influence the career decision process. The Longitudinal Research on Officer Career (LROC) is a valuable source of information for addressing these research questions.

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APPENDIX A **BEHAVIORAL INTENTION MEASURE**

68. Which of the following best describes your current career intentions?

- ☐ I plan to stay in the Army beyond 20 years
- ☐ I plan to stay in the Army until retirement at 20 years
- ☐ I plan to stay in the Army beyond my obligation, but am undecided about staying until retirement
- ☐ I am undecided whether or not I will stay in the Army upon completion of my obligation
- ☐ I will probably leave the Army upon completion of my obligation
- ☐ I will definitely leave the Army upon completion of my obligation

45. Right now I am

- ☐ Planning on an Army career
- ☐ Leaning towards an Army career
- ☐ Undecided
- ☐ Leaning towards civilian career
- ☐ Planning on a civilian career
- ☐ NA - has not happened yet

APPENDIX B

ATTITUDE TOWARD STAYING IN THE ARMY MEASURE

50. I would rather be affiliated with the Army than any civilian organization I know of.....

Strongly agree
Agree
Neither agree nor disagree
Disagree
Strongly disagree

☐ ☐ ☐ ☐ ☐

54. Even if I had an offer of a bit more pay from a civilian organization, I would be reluctant to leave the Army.....

☐ ☐ ☐ ☐ ☐

61. I frequently feel like leaving the Army.....

☐ ☐ ☐ ☐ ☐

33. The kind of work I enjoy most is available:

- ☐ Only in the military
- ☐ Primarily in the military
- ☐ Equally in military and civilian world
- ☐ Primarily in the civilian world
- ☐ Only in the civilian world

APPENDIX C
SUBJECTIVE NORMS MEASURE

31. Most important to my personal pride is:

- ☐ My service to the Army and the United States as a soldier
- ☐ My technical/professional skills

32. When I think of myself as a professional, I compare myself most often with:

- ☐ Army leaders whom I know and respect
- ☐ Those who are respected in my technical career field whether or not they are in the Army

46. Civilians are more likely to share my values and beliefs than other officers

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

APPENDIX D

PERCEIVED BEHAVIORAL CONTROL MEASURE

69. How difficult do you think it would be for you to find a good civilian job right now, considering both your own qualifications and current labor market conditions?

- ☐ Very difficult
- ☐ Difficult
- ☐ Not particularly difficult or easy
- ☐ Easy
- ☐ Very easy

70. How difficult would it be for you to leave the Army in the next year or so, given your current personal or family situation?

- ☐ Very difficult
- ☐ Difficult
- ☐ Not particularly difficult or easy
- ☐ Easy
- ☐ Very easy

APPENDIX E

FACTOR LOADINGS FOR INDEPENDENT AND DEPENDENT MEASURES

Behavioral Intention

FACTOR LOADINGS

Which of the following best describes your current career intentions?	.95944
Right now I am...(planning career/civilian)	.95944
EIGENVALUE	1.84
PERCENTAGE OF THE VARIANCE ACCOUNTED FOR	92.1

Attitudes Toward Staying in the Army

I would rather be affiliated with the Army than any civilian organization I know of	.83056
Even if I had an offer of a bit more pay from a civilian organization, I would be reluctant to leave the Army	.85670
I frequently feel like leaving the Army	-0.79251
The kind of work I enjoy most is available... (military/civilian)	.74944
EIGENVALUE	2.61
PERCENTAGE OF THE VARIANCE ACCOUNTED FOR	65.3

Subjective Norms

Most important to my personal pride is... (service to Army/professional skills)	.71987
When I think of myself as a professional, I compare myself most often with:...	
(Army leaders/respected professionals)	.76483
Civilians are more likely to share my values and beliefs than other officers	-0.63351
EIGENVALUE	1.50
PERCENTAGE OF THE VARIANCE ACCOUNTED FOR	50.2

Perceived Behavioral Control

How difficult do you think it would be for you to find a good civilian job right now, considering both your own qualifications and current labor market conditions?	.86069
How difficult would it be for you to leave the Army in the next year or so, given your current personal or family situation?	.86069
EIGENVALUE	1.48
PERCENT OF THE VARIANCE ACCOUNTED FOR	74.1

**END
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